

Title (en)

Method for producing fully dense powdered metal helical gear

Title (de)

Verfahren zur Herstellung von völlig dichten schrägverzahnten Zahnrädern aus Metallpulver

Title (fr)

Procédé de préparation de roues dentées hélicoïdales denses à partir de poudre métallique

Publication

EP 0955115 A1 19991110 (EN)

Application

EP 99108769 A 19990503

Priority

US 7214698 A 19980504

Abstract (en)

A method for producing a fully dense powdered metal helical gear can include the steps of placing powdered metal in a preform die wherein it can be compacted axially by rotating punches to create a helical gear preform. Next the preform can be sintered. The preform can then be heated to an appropriate temperature and inserted into a hot forming die wherein it can be impacted axially by a rotating punches to fully densify the helical gear preform. Next the densified helical gear can be inserted in a burnishing die where it can be forced through a helical profiled die cavity to impart more precise external dimensions. Process temperatures and impact forces can vary depending on the properties of the powdered metal and desired characteristics of the finished part. Secondary treatments, such as rolling, shaving, heat treating, chining to length and inner diameter sizing can be subsequently performed. <IMAGE>

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Citation (search report)

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